Appendix P

P.0 Standards and Guidelines for BLM

P.1 Development of Standards for Public Land Health and Grazing Management Guidelines

P.1.1 Introduction

Congress passed the Taylor Grazing Act in 1934 to direct occupancy and use of public rangelands, to preserve natural resources from destruction or unnecessary injury, provide for the orderly use, improvement, and development of rangelands. Since enactment of the Taylor Grazing Act, several studies and reports have identified problems on the western rangelands. The Public Rangelands Improvement Act (PRIA, 1978) identified that rangelands are producing below their potential, rangelands will remain in an unsatisfactory condition and some areas may decline further under present levels of funding. These unsatisfactory conditions present a high risk of soil loss, water loss, loss of or threats to fish and wildlife habitat, loss of forage for livestock and grazing animals, and unpredictable and undesirable long term local and regional climatic and economic changes.

Resource conditions have improved since passage of PRIA, but many riparian areas continue to be degraded and are not functioning properly. The Director of the Bureau of Land Management requested the agency's National Public Lands Advisory Council to recommend ways to improve BLM's rangeland management program. In 1991, the Council commissioned a blue-ribbon panel of professional ecologists and rangeland managers who produced a report titled *Rangeland-Program Initiatives and Strategies*. Their report concluded that BLM's primary objectives should be to protect the basic components of rangelands: soil, water, and vegetation.

The BLM initiated a new effort, in 1993, commonly referred to as “Rangeland Reform 94.” The focus of this effort is to enhance the environmental health of public rangelands. This effort was initiated with the publication of *Rangeland Health: New Methods to Classify, Inventory, and Monitor Rangelands*, 1994. The Committee published the report on Rangeland Classification, Board of Agriculture, of the National Research Council. The report explained criteria and indicators of rangeland health, assessment practices, and inventory and monitoring requirements.

The “Rangeland Reform” initiative culminated in a national environmental impact statement to provide grazing management direction to improve ecological conditions while providing for sustainable development on the land. In 1995, the Secretary of the Interior developed new grazing regulations to implement needed changes in BLM's rangeland management program.

P.1.2 Purpose and Need

The "Rangeland Reform 94" effort resulted in the publication of a final rule for Grazing Administration of Public Lands, on February 22, 1995, that became effective August 21, 1995. Under section 4108.2 of these regulations the BLM State Director is required to develop state or regional standards and guidelines for grazing administration in consultation with a BLM Resource Advisory Council (District Advisory Council), other agencies, and the public. The purpose of the standards and guidelines is to ensure the long-term health of public rangelands as indicated by the following quotations from the Federal Register, Vol. 60, No. 35, page 9956, dated February 22, 1995:

> "The guiding principles for standards and guidelines require that state or regional standards and guidelines address the basic components of healthy rangelands."
>
> "The Department intends that the standards and guidelines will result in a balance of sustainable development and multiple use along with progress towards attaining healthy, properly functioning rangelands."
>
> "The Department believes that by implementing grazing-related actions that are consistent with the fundamentals of Subpart 4180.1 and the guiding principles of Subpart 4180.2, the long-term health of public rangelands can be ensured."

P.1.3 Fundamentals of Rangeland Health

In its report, the Committee for the National Research Council defined rangeland health as "...the degree to which the integrity of the soil and ecological processes of rangeland ecosystems are sustained," and in particular those "ecological processes that are most important in sustaining the capacity of rangeland to satisfy values and produce commodities." The committee from the Council recommended "...the determination of whether a rangeland is healthy, at risk, or unhealthy should be based on the evaluation of three criteria: degree of soil stability and watershed function, integrity of nutrient cycles and energy flow, and presence of functioning recovery mechanisms" (Ibid). When the factors of a healthy rangeland site are met, then values and commodities will be conserved. The "Rangeland Health Matrix" developed by the National Research Council is presented at the end of this section.

Title 43 of the Code of Federal Regulation, Section 4180 of the grazing regulations directs the authorized officer to ensure the following conditions of rangeland health exist and that each of these components are addressed during the development of regional standards:

- Watersheds are in or are making significant progress toward properly functioning physical condition, including their upland, wetland, and aquatic components; soil and plant conditions support infiltration, soil moisture storage, and the release of water that are in balance with climate and landform and maintain or improve water quality, water quantity, and the timing and duration of flow.
- Ecological processes, including the hydrologic cycle, nutrient cycle, and energy flow, are maintained, or there is significant progress toward their attainment, in order to support healthy biotic populations and communities.
- Water quality complies with State water quality standards and achieves, or is making significant progress toward achieving, established BLM management objectives such as meeting wildlife needs.
- Habitats are, or are making significant progress toward being restored or maintained for federally threatened and endangered species, federal proposed or candidate and other special status species.

Items (a) and (b) prescribe physical and biological characteristics of rangeland health. Items (c) and (d) describe legal requirements that will be met when healthy rangelands are properly functioning (43 CFR 4180.1). In addition, habitat quality for native plant and animal populations and communities is identified as an ecological component that must be addressed in 43 CFR 4180.2 when developing regional standards.

P.1.4 Attributes for Standards and Guidelines

The fundamentals of rangeland health, guiding principles for standards and the fallback standards address ecological components that are affected by all uses of public rangelands, not just livestock grazing. However, the scope of this final rule, and therefore the fundamental of rangeland health of part 4180.1, and the standards and guidelines to be made effective under part 4180.2, is limited to grazing administration (Federal Register, Vol. 60, No. 35, pg. 9970-9971). The following are characteristics of standards and guidelines.

Standard

- Criterion regarding a resource quality or quantity upon which a judgement or decision is based (e.g., a statement concerning expected ecosystem or rangeland health)
- Measurable
- Establishes parameters within which resource uses and management activities can be conducted
- Should have observable indicators

Guideline

- Describes a practice, prescription, method or technique used to ensure that grazing management activities meet standards
- Either a set of management practices from which one or more practices is selected; or is a specific, required management practice
- Could be adapted or changed when monitoring or other information indicates the guidelines are not effective or a better means of meeting applicable standard exists

At a minimum, state or regional guidelines must address the following:

- Maintain or promote adequate amounts of vegetative ground cover, including standing plant material and litter, to support infiltration, maintain soil moisture storage, and stabilize soils
- Maintain or promote subsurface soil conditions that support permeability rates, appropriate to climate and soils
- Maintain, improve or restore riparian-wetland functions including energy dissipation, sediment capture, groundwater recharge and stream bank stability
- Maintain or promote stream channel morphology (e.g. gradient width/depth ratio, channel roughness and sinuosity) and functions appropriate to climate and landform
- Maintain or promote the appropriate kinds and amounts of organisms, plants and animals to support the hydrologic cycle, nutrient cycle, and energy flow
- Promote the opportunity for seedling establishment of appropriate plant species when climate conditions and space allow
- Maintain, restore or enhance water quality to meet management objectives, such as meeting wildlife needs

- Restore, maintain or enhance habitats to assist in the recovery of Federal threatened or endangered species
- Restore, maintain or enhance habitats of federal proposed, Category 1 and 2 federal candidate, and other special status species to promote their conservation
- Maintain or promote the physical and biological conditions to sustain native populations and communities
- Emphasize native species in the support of ecological function
- Incorporate the use of non-native plant species only in those situations in which native species are not available in sufficient quantities or are incapable of maintaining or achieving properly functioning conditions and biological health

P.1.5 Resource Advisory Council Direction

Under the February 22, 1995, rulemaking, the Secretary of the Interior called for the formation of Resource Advisory Councils (RACs) to advise the BLM about defining areas and the development of standards and guidelines for those areas. The RACs will advise the BLM concerning preparation, amendment, and implementation of land use plans. The existing California Desert District Advisory Council (DAC) serves as the California Desert District's Resource Advisory Council. The rulemaking directs the State Director to coordinate with Indian tribes, the public, and affected state and federal agencies during development of standards and guidelines.

The staffs in areas once defined as the Bakerfield, Ukiah, and Susanville Districts, coordinated on a state-wide planning effort called *Rangeland Health Standards and Guidelines for California and Northwestern Nevada, Environmental Impact Statement* to adopt regional standards for rangeland health and guidelines for grazing management on BLM-administered lands. The DAC chose not to initiate a new planning process for the express purpose of analyzing livestock standard and guidelines nor contribute staff to the statewide effort. The Council preferred instead to develop standards for all public land uses through several ongoing planning efforts. In addition, they felt it would be more efficient to address standards at the planning area level instead of desert-wide, and the CDCA Plan primarily conforms to the fundamentals of rangeland health. These planning efforts include the Western Mojave Coordinated Management Plan, Northern and Eastern Mojave Desert Planning Effort, Coachella Valley Habitat Conservation Plan, Northern and Eastern Colorado Desert Coordinated Management Plan, and plan amendments for the South Coast Resource Management Plan and the Eastern San Diego County Management Framework Plan.

The DAC has been actively involved in development of Standards for Public Land Health and Guidelines for Grazing Management. Early in the process a subcommittee was formed to develop a proposal for standards and guidelines, their recommendations are listed at the end of this section. Upon completion of the Northern and Eastern Mojave Desert Planning Effort the State Director will submit a set of standards and guidelines for approval by the Secretary of the Interior. Adoption of the regional standards will occur when the Secretary concurs. Until adoption of the regional standards, the fallback standards and guidelines or existing planning and activity plan guidance will be utilized, depending on which one more closely matches the fundamentals of rangeland health.

P.1.6 Standards and Guidelines- Constraints and Development

The standards for public land health apply to resource uses and activities undertaken on the public lands. The guidelines for livestock grazing apply only to livestock grazing management practices. Guidelines for activities other than livestock grazing are not proposed at this time; however, BLM intends to formulate additional guidelines in the future as opportunities present themselves.

The standards and the guidelines for livestock grazing are subject to the approval of the Secretary of Interior. Pending Secretarial approval, the National Fallback Standards and Guidelines apply.

The intent of the standards and guidelines is to ensure a balance of sustainable development and multiple use along with progress toward attaining healthy, properly functioning ecosystems.

The standards and applicable guidelines will be implemented through terms and conditions of permits, leases, and other authorizations or actions issued or undertaken in accordance with BLM's approved land use plans.

To the extent possible, implementation will be determined and applied through collaborative management approaches with other land owners, organizations, and agencies on a regional or watershed scale, or in relation to discreet land use plan units such as areas designated for OHV use as open, limited, or closed.

At a minimum, implementation will be coordinated and in consultation with the affected permitees/lessees, the appropriate State agencies, tribes, and interested public.

BLM's grazing regulations require that "appropriate action" be taken when "existing grazing management practices or levels of grazing use… are significant factors in failing to achieve the standards and… guidelines." BLM will take corrective action as practicable for other management practices or uses not meeting the standards.

Some areas may require years to fully achieve the standards, due to natural factors such as climatic conditions, soils, presence of naturalized non-native plant species, and other related factors.

The values and demand for use of the public lands will continue to increase and be diverse.

In applying the standards and any applicable guidelines, BLM will emphasize a balanced approach to resource management, taking into account such factors as context and intensity of impacts and the opportunities for restoration.

P.2 Standards and Guidelines – DAC Recommendations

P.2.1 Standards

Soil

Soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, geology, landform, and past uses. Adequate infiltration and permeability of soils allow accumulation of soil moisture necessary for optimal plant growth and vigor, and provide a stable watershed as indicated by:

- Canopy and ground cover are appropriate for the site
- There is diversity of plant species with a variety of root depths
- Litter and soil organic matter are present at suitable sites
- Maintain the presence of microbiotic soil crusts that are in place
- Evidence of wind or water erosion does not exceed natural rates for the site
- Hydrologic and nutrient functions maintained by permeability of soil and water infiltration are appropriate for precipitation

Native Species

Healthy, productive and diverse habitats for native species, including special status species (Federal T&E, federal proposed, federal candidates, BLM sensitive, or California State T&E, and CDD UPAs) are maintained in places of natural occurrence as indicated by:

- Photosynthetic and ecological processes continue at levels suitable for the site, season, and precipitation regimes
- Plant vigor, nutrient cycle, and energy flow are maintaining desirable plants and ensuring reproduction and recruitment
- Plant communities are producing litter within acceptable limits
- Age class distribution of plants and animals are sufficient to overcome mortality fluctuations
- Distribution and cover of plant species and their habitats allow for reproduction and recovery from localized catastrophic events
- Alien and noxious plants and wildlife do not exceed acceptable levels
- Appropriate natural disturbances are evident
- Populations and their habitats are sufficiently distributed to prevent the need for listing special status species

Riparian/Wetland and Stream Function

Wetland systems associated with subsurface, running, and standing water, function properly and have the ability to recover from major disturbances. Hydrologic conditions are maintained as indicated by:

- Vegetative cover will adequately protect banks, and dissipate energy during peak water flows
- Dominant vegetation is an appropriate mixture of vigorous riparian species
- Recruitment of preferred species is adequate to sustain the plant community
- Stable soils store and release water slowly
- Plant species present indicate soil moisture characteristics are being maintained
- There is minimal cover of invader/shallow-rooted species, and they are not displacing deep-rooted native species
- Maintain shading of stream courses and water sources for riparian dependent species
- Stream is in balance with water and sediment being supplied by the watershed
- Stream channel size and meander is appropriate for soils, geology, and landscape
- Adequate organic matter (litter and standing dead plant material) is present to protect the site and to replenish soil nutrients through decomposition

Water Quality

Water quality will meet state and federal standards including exemptions allowable by law as indicated by:

- Dissolved oxygen levels, aquatic organisms and plants (e.g., macro invertebrates, fish and algae) indicate support of beneficial uses
- Chemical constituents, water temperature, nutrient loads, fecal coliform and turbidity are appropriate for the site or source
- Best Management Practices will be implemented.

Air Quality:

Air quality will meet State and Federal standards including exemptions allowable by law.

- Best Management Practices will be implemented.

P.3 Guidelines for Grazing Management

Resource conditions of each allotment will be routinely assessed to determine if Public Land Health Standards are being met. In those areas not meeting a Standard, monitoring processes will be established if they do not presently exist to monitor indicators of health until the Standard or resource objective has been attained. Activity plans for other uses or resources that overlap an allotment could have prescribed resource objectives that may further constrain grazing activities, e.g., ACEC Plans. In an area where a Standard has not been met, the results of monitoring the modification or implementation of grazing management actions will be reviewed annually. During the final phase of the assessment process, the Determination will schedule the next assessment of resource conditions. A livestock trailing network, grazed plants, livestock facilities, and animal waste are expected impacts in all grazing allotments and will be considered during analysis of the assessment/monitoring process. To attain Standards and resource objectives, the best available science will be used to determine appropriate grazing management actions. Cooperative funding and assistance from other agencies, individuals, and groups will be sought to collect prescribed monitoring data for indicators of each Standard.

- Facilities are to be located away from riparian-wetland areas wherever they conflict with achieving or maintaining riparian-wetland functions.
- The development of springs and seeps or other projects affecting water and associated resources will be designed to protect the ecological functions and processes of those sites.
- Grazing activities at an existing range improvement that conflict with achieving proper functioning conditions (PFC) and resource objectives for wetland systems (lentic, lotic, springs, adits, and seeps) will be modified so PFC and resource objectives can be met, and incompatible projects will be modified to bring them into compliance. The BLM will consult, cooperate, and coordinate with affected interests and livestock producer(s) prior to authorizing modification of existing projects and initiation of new projects. New range improvement facilities are to be located away from wetland systems if they conflict with achieving or maintaining PFC and resource objectives.
- Supplements will be located well away from wetland systems.
- Management practices will maintain or promote perennial stream channel morphology (e.g., gradient, width/depth ratio, channel roughness, and sinuosity) and functions that are appropriate to climate and landform.

- Grazing management practices are to meet State and Federal water quality standards. Where impoundments (stock ponds) and troughs that have a sustained discharge yield of less than 200 gallons per day to surface or groundwater are accepted from meeting State drinking water standards per SWRCB Resolution Number 88-63.
- In the California Desert Conservation Area all wildfires in grazing allotments will be suppressed. However, to restore degraded habitats infested with invasive weeds (e.g., tamarisk) prescribed burning may be utilized as a tool for restoration on a case-by-case basis. Prescribed burns may be used as a management tool for chaparral plant communities in the South Coast Region, where fire is a natural part of the regime.
- When climatic conditions and space allow, seedling establishment of native species will be promoted.
- Grazing on designated ephemeral (annual and perennial) rangeland is allowed to occur only if reliable estimates of production have been made, an identified level of annual growth or residue to remain on site at the end of the grazing season has been established, and adverse effects on perennial species are avoided.
- During prolonged drought, range stocking will be reduced to scientifically based carrying capacity, based on climatic conditions. Livestock utilization of key perennial species on year-long allotments will be checked about March 1 when the Palmer Severity Drought Index/Standardized Precipitation Index indicates dry conditions are expected to continue.
- Through the assessment process or monitoring efforts, the extent of invasive and/or exotic plants and animals will be recorded and evaluated for future control measures. Methods and prescriptions will be implemented, and an evaluation will be completed to ascertain future control measures.
- Restore, maintain or enhance habitats to assist in the recovery of Federally listed threatened and endangered species. Restore, maintain or enhance habitats of special status species including Federal proposed, Federal candidates, BLM sensitive, or California State T&E to promote their conservation.
- Grazing activities will support biological diversity across the landscape, and native species and microbiotic crusts are to be maintained.
- Experimental and research efforts will be encouraged to provide answers to grazing management and related resource concerns through cooperative and collaborative efforts with outside agencies, groups, and entities.
- Based on Holechek's (et al., 1998) work or the best available scientific information, livestock utilization level of key perennial species of the Mojave Desert (range type) will not exceed 40 percent on ranges that are grazed during the dormant season and are meeting standards. Rangelands that are grazed during the active growing season and are meeting standards will not exceed 25 percent utilization of key species. The utilization range between 25 and 40 percent is for those forage species with a proper use factor that will allow consumption up to and between 25 and 40 percent otherwise lower use limits will prevail. Until modified with new information, utilization of the following general range types will be prescribed for grazing use.

Table P.1 – Utilization Guidelines for Different Range Types in the CDD[1]

Average Annual Precipitation		Percent Use of Key Species for Moderate Grazing[2]	Range Types (1)	Reference
cm	in.			
10-13	4-8	25-35	Salt desert shrub land	Hutchings and Stewart 1953; Cook and Child 1971
13-30	8-12	30-40	Semidesert grass and shrubland	Valentine 1970; Paulsen and Ares 1961; Martin and Cable 1974; Holechek 1991
13-30	8-12	30-40	Sagebrush grassland	Pechanec and Stewart 1949; Laycock and Conrad 1981
25-100	10-40	50-60	California annual grassland	Hooper and Heady 1970; Bartolome et al. 1980; Rosiere 1987
40-130	16-50	30-40	Mountain shrub land	Pickford and Reid 1948; Skovlin et al. 1976
40-130	16-50	30-40	Oak woodland	Pieper 1970
25-45	9-16	30-40	Pinyon-juniper woodland	Pieper 1970

[1] Adapted from Holechek et al.and Holechek 1991

[2] Rangelands in good condition and/or grazed during the dormant season can withstand the higher utilization level. Those in poor condition or grazed during active growth should receive the lower utilization.

P.4 BLM Proposed Standards – Changes in California Desert District Advisory Council (DAC) Recommendations

The Desert Advisory Council proposed four standards, which, as modified, are proposed for adoption in the California Desert District, including the NEMO planning area. The BLM has made minor editorial changes to the wording proposed by the DAC in some instances, to clarify meaning, and these are not discussed. Other additions, deletions, or changes to the DAC Recommendations follow, with a short explanation after each modification (deletions are in strikethrough, additions are underlined and bolded):

1. Soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, geology, **and land use.** – This addition was made to acknowledge that past land uses might affect site potential for these soil factors, for the reasonably foreseeable future.

2. **Alien and noxious plants do not exceed acceptable levels.** – This addition was made in response to BLM policy to address this issue as a critical element of the human environment, in recognition of the many direct and indirect roles these plants have in interfering with the attainment and maintenance of diverse biological communities.

3. ~~Water quality is improved or maintained at the highest level feasible.~~ – This was deleted as it was considered potentially unattainable, based on cost consideration alone. The benefits to wetland systems which would be derived from water quality maintenance or improvements provide the better standard to judge whether the BLM should pursue, them, and these would be based on the indicators outlined.

4. Vegetative cover ~~of no less than 70 percent for a stream reach or the percentage that will~~ adequately protect**s** banks, and dissipates energy during peak water flows – This indicator was twofold, a quantitative indicator that was optional, or a qualitative indicator that was a requirement, i.e. that cover adequately protect banks. It matters as much where as how much cover there is. The qualitative indicator with a site-specific analysis is a more appropriate desert-wide standard (see also next standard).

5. **Shading of stream courses and water sources support riparian vertebrates and invertebrates** – This was added to supplement the vegetative cover indicator to assure optimal temperatures are maintained that sustain biotic communities within wetland systems.

6. ~~If present, point bars are vegetated~~ – This was deleted as it was considered potentially unattainable, based on site potential. Site-specific analysis can more appropriately determine whether point bars will sustain vegetation, given the frequency and size of flooding and soil depositional events.

7. Water Quality will meet State and Federal standards **including exemptions allowable by law.** – This addition acknowledges that various uses of the public lands are covered by exemptions, under certain circumstances, and that those exemptions will be recognized.